Title: AUTOMATIC TURN-ON AND TURN-OFF CONTROL FOR BATTERY-POWERED HEADSETS

## IN THE CLAIMS

Please amend the claims as follows:

## 1-8. (Canceled)

 (Previously Presented) Apparatus having at least an on state and on off or standby state and comprising:

one or more earcups;

means for sensing acoustic energy based on user movement; and

means, responsive to a perceived absence of the acoustic energy based on user movement, for switching the apparatus from the on state to the off or standby state.

- (Previously Presented) The apparatus of claim 9 wherein the acoustic energy is inaudible.
- 11. (Canceled)
- (Previously Presented) The apparatus of claim 9 wherein the means for sensing acoustic energy based on user movement comprises a filter having an output coupled to a threshold detector.
- 13.-14. (Canceled)
- (Previously Presented) Apparatus having at least two operating states and comprising: one or more earcups;
  - circuitry for sensing a condition based on user jaw movements or blood movement within a user's head: and

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circuitry for changing the operating state of the headset from an on state to an off state in response to a perceived absence of the condition.

16. (Currently Amended) The apparatus of claim 15 wherein the <u>circuitry for changing the operating state of the headset changes the operating state from an on state to an off state in response to a perceived absence of the condition changes the operating state after a perceived absence of the condition for a period of time of predetermined period of time is at least one minute and the circuitry for changing comprises analog circuitry.</u>

## 17-20. (Canceled)

- 21. (Currently Amended) Apparatus comprising:
  - one or more earcups:
  - [[an]] a microphone for sensing acoustic energy produced by user movement;
  - a timer; for determining whether the acoustic energy is absent for at least a predetermined amount of time; and
  - a switch responsive to the timer for switching ANR circuitry from an active state to an inactive state.
- 22. (Previously Presented) The apparatus of claim 21, wherein the timer comprises: a threshold detector; and a microprocessor coupled to the threshold detector and to the switch.
- (Previously Presented) The apparatus of claim 21, wherein the predetermined amount of time is at least one minute.
- 24. (Previously Presented) A method of operating apparatus including an audio transducer and ANR circuitry, the method comprising: determining whether acoustic energy produced by the user has been sensed by the audio
  - transducer; and

switching at least a portion of the ANR circuitry from an active state to an inactive or standby state in response to a determination that the acoustic energy has not been sensed for at least a predetermined amount of time.

- (Previously Presented) The method of claim 24, wherein the acoustic energy is inaudible
  and the predetermined amount of time is at least one minute.
- 26. (Previously Presented) The method of claim 24, wherein the apparatus includes an ANR driver; and wherein the method further comprises switching the ANR circuitry from the inactive state to the active state in response to sensing deflection of a portion of the ANR driver.
- (Previously Presented) The method of claim 24, wherein the acoustic energy is produced by user blood flow.
- 28. (Previously Presented) The method of claim 24, wherein switching at least a portion of the ANR headset from an active state to an inactive state in response to a perceived absence of the condition comprises:
  - starting a timer in response to sensing the condition, with the timer configured to expire after measuring the predetermined amount of time; and
  - switching at least the portion of the ANR headset from the active state to the inactive state in response to expiration of the timer.

29-40. (Canceled)

(Previously Presented) Apparatus comprising:
 ANR circuitry;

an input node for receiving a signal; and

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means, including a programmable timer and a switch, responsive to the received signal, for switching the ANR circuitry from an active operating state to an inactive operating state.

- (Previously Presented) The apparatus of claim 41, further comprising a threshold detector responsive to the first output of the bandpass filter to provide a second output, wherein the switch is responsive to the second output.
- 43. (Canceled)
- 44. (Previously Presented) The apparatus of claim 41, wherein the timer comprises a processor for outputting a control signal to the switch after passage of a predetermined amount of time.
- 45. (Canceled)
- (Previously Presented) The apparatus of claim 41, wherein the signal is based on acoustic energy produced by a user of the apparatus.
- 47. (Previously Presented) Apparatus comprising:
  - a filter to provide a filter output indicative of whether the apparatus is in normal use; a threshold detector responsive to the filter output signal to provide a detector output; a digital timer responsive to the detector output to start a timing period and responsive to
  - completion of the timing period to produce a control signal; and a switch responsive to the control signal to switch ANR circuitry from an active operating
- state to an inactive operating state.
- 48. (Previously Presented) The apparatus of claim 47, wherein the filter output signal is based substantially on acoustic energy produced by a user of the apparatus when the user is wearing at least a portion of the apparatus.

- 49. (Previously Presented) The apparatus of claim 47, wherein the filter comprises analog circuitry that defines a passband of 1-5 Hertz; the threshold detector comprises analog circuitry; the timer comprises a processor; and the switch comprises a transistor.
- (Previously Presented) The apparatus of claim 47, wherein the filter output is based on acoustic energy produced by user movement.
- 51. (Previously Presented) Apparatus comprising:
  - a switch for switching ANR circuitry from an active operating state to an inactive operating state; and
  - timer means, responsive to cessation of intended usage of the apparatus, for controlling status of the switch, wherein the timer means included a microprocessor.
- (Previously Presented) The apparatus of claim 51, wherein the timer means outputs a control signal to the switch after passage of a predetermined amount of time.
- 53. (Previously Presented) The apparatus of claim 51, further comprising: a bandpass filter responsive to operation of an ANR microphone to provide an output based substantially on acoustic energy produced by the user.
- (Previously Presented) The apparatus of claim 53, wherein the bandpass filter has a passband of 1-5 Hertz.
- (Previously Presented) The apparatus of claim 53, wherein the acoustic energy produced by the user is based on blood flow.
- 56. (Previously Presented) A method of operating ANR circuitry, comprising: automatically determining whether acoustic signals produced by a user of the ANR circuitry are present within a cavity associated with the circuitry; and

automatically turning off the ANR circuitry in response to determining that the acoustic signals produced by the user are no longer present.

- (Previously Presented) The method of claim 56, wherein the acoustic signals produced by the user are based on user blood flow.
- 58. (Previously Presented) The method of claim 56, wherein automatically determining whether acoustic signals produced by the user are present comprises: producing a first output in response to operation of a microphone; filtering the first output to produce a filtered output; and determining based on magnitude of the filtered output whether the acoustic signals produced by the user are present.
- 59. (Previously Presented) The method of claim 51, wherein automatically turning off the ANR circuitry in response to determining that the acoustic signals are no longer present, comprises:
  - initiating a time measurement in response to an affirmative determination that acoustic signals produced by the user are present; and
  - turning off the ANR circuitry in response to the time measurement indicating passage of at least a predetermined amount of time.
- (Previously Presented) The method of claim 56, wherein the cavity is at least partly defined by an earcup.
- 61. (Previously Presented) A method comprising:
  - sensing an electrical signal indicative of intended usage of an ANR headset having ANR circuitry;
  - in response to sensing the sensing the electrical signal, resetting a digital timer; in response to the digital timer measuring a predetermined amount of time without resetting, automatically turning off the ANR circuitry.

62. (Previously Presented) The method of claim 61, wherein automatically turning off the ANR circuitry occurs in response to a perceived absence of an electrical condition indicative of acoustic energy based on user movement.